

Claims

1. An audio/video signal processing apparatus for a plurality of different audio and/or video signal processing operations with a housing (2), a central unit (110) arranged in the housing (2), a plurality of signal processing modules (12) provided in the housing (2) for audio and/or video signal processing operations and a control unit, wherein the central unit (110) comprises:

a processor (112) for the execution of computing operations for an audio and/or video signal processing operation in accordance with an activated signal processing module of the plurality of signal processing modules (12),

an archiving device (116) for storing audio and video signals,

a man-machine interface (118) with a device (320) for generating a display signal for a common visual user guidance of the audio and/or video signal processing operations of the plurality of signal processing modules, a device (340) for detecting user operations from the control unit (150) for the control of the audio and/or video signal processing and a device (350) for the respective control of one of the signal processing modules (12), and

an I/O communication interface (114) for receiving audio and/or video signals to be processed and for the output of audio and/or video signals including the display signal for the visual user guidance on a display device (330) which can be connected to the I/O communication interface (114).

2. An audio/video signal processing apparatus according to claim 1, wherein the archiving device (116) is a hard disk drive.
3. An audio/video signal processing apparatus according to claim 1 or 2, wherein the I/O communication interface (114) comprises connections (16, 17) for at least

one of the interface standards PCI, USB, Firewire or RS232 for a wireless and/or wire-connected LAN/WLAN network and/or for the Internet an analogue modem, an ISDN connection or an ADSL connection.

4. An audio/video signal processing apparatus according to any of claims 1 to 3, wherein the I/O communication interface (114) is of modular construction.
5. An audio/video signal processing apparatus according to any of claims 1 to 4, wherein connections (17) of the I/O communication interface (114) are arranged for a permanent apparatus connection on the back of the housing and connections (16) of the I/O communication interface (114) are arranged for a temporary apparatus connection on the front of the housing.
6. An audio/video signal processing apparatus according to any of claims 1 to 5, wherein the I/O communication interface (114) contains at least one output connection for a television apparatus or a monitor for the display of a video signal.
7. An audio/video signal processing apparatus according to any of claims 1 to 6, wherein the device (320) for the generation of a display signal is an on-screen display unit.
8. An audio/video signal processing apparatus according to claim 7, wherein the display signal for the visual user guidance displays a list of menu options.
9. An audio/video signal processing apparatus according to any of claims 1 to 8, wherein after powering up a menu for the selection of an audio/video signal processing functionality is displayed.
10. An audio/video signal processing apparatus according to any of claims 1 to 9, wherein the control unit (150) is a selection device for the selection of one of the displayed menu options.

11. An audio/video signal processing apparatus according to any of claims 1 to 10, wherein the control unit (150) is a remote control unit, in particular a radio remote control unit.
12. An audio/video signal processing apparatus according to claim 11, wherein the remote control unit (150) contains a manually operable rotating wheel (510) for the selection of one of the displayed menu options.
13. An audio/video signal processing apparatus according to claim 11, wherein the remote control unit (150) contains manually operable scroll keys.
14. An audio/video signal processing apparatus according to any of claims 8 to 13, wherein the visual user guidance for all signal processing modules (12) is performed via menus.
15. An audio/video signal processing apparatus according to any of claims 1 to 14, wherein the man-machine interface (118) contains a storage device (370) for storing the status information needed for the user guidance and operation in accordance with the signal processing modules (12) provided in the housing (2).
16. An audio/video signal processing apparatus according to any of claims 1 to 15, wherein the man-machine interface (118) converts signals received by the control unit (150) in accordance with the respectively active signal processing module (12) into module-specific control commands for the respectively active signal processing module (12).
17. An audio/video signal processing apparatus according to any of claims 1 to 16, wherein the status information specifies the respectively active signal processing module (12).

18. An audio/video signal processing apparatus according to any of claims 1 to 17, wherein the processor (112) of the central unit (110) executes all the audio/video computing operations.
19. An audio/video signal processing apparatus according to any of claims 1 to 18, wherein the processor (112) of the central unit (110) simultaneously processes a plurality of different audio/video computing operations.
20. An audio/video signal processing apparatus according to any of claims 1 to 19, which also contains a fan (650) for passing cooling air over a component of the audio/video signal processing apparatus.
21. An audio/video signal processing apparatus according to claim 20, wherein the fan is a processor fan (650) for passing cooling air over the processor (112).
22. An audio/video signal processing apparatus according to claim 20, wherein the fan is a power supply unit fan for passing cooling air over the power supply unit (18).
23. An audio/video signal processing apparatus according to any of claims 19 to 21, wherein the fan (650) is arranged directly on the housing (2).
24. An audio/video signal processing apparatus according to claim 23, which also comprises an air duct (640) for the connection of the fan (650) to the housing (2) for the feeding of external air to the component to be cooled.
25. An audio/video signal processing apparatus according to claim 24, wherein the air duct (640) exhibits a conical shape.
26. An audio/video signal processing apparatus according to any of claims 21 to 25, wherein the processor fan (650) exhibits a larger cross-section than the processor (112).

27. An audio/video signal processing apparatus according to any of claims 20 to 26, wherein the fan (650) exhibits a cross-section larger than 45x45 mm.
28. An audio/video signal processing apparatus according to any of claims 20 to 27, wherein the fan (650) is operated with a rotational speed slower than 3000 rpm.
29. An audio/video signal processing apparatus according to any of claims 20 to 28, wherein the rotational speed of the fan (650) is controlled in accordance with the temperature of the component to be cooled, in particular of the processor (112) or of the power supply unit (18).
30. An audio/video signal processing apparatus according to any of claims 1 to 29, wherein mechanical drives (15) provided in the housing (2) are mounted via damping elements (710).
31. An audio/video signal processing apparatus according to claim 30, wherein the mechanical drive (15) is an optical drive, in particular a DVD drive or a CD drive or a hard disk drive.
32. An audio/video signal processing apparatus according to claim 30 or 31, wherein the damping elements (710) are made of rubber.
33. An audio/video signal processing apparatus according to any of claims 30 to 32, wherein the mechanical drive (15) can be inserted into the housing (2) via a plastic rail and the plastic rail is mounted on the mechanical drive (15) via rubber buffers (710).
34. An audio/video signal processing apparatus according to any of claims 1 to 33, wherein the housing (2) comprises a plurality of slots (13) for the insertion of signal processing modules (12) in the form of plug-in cards and a plurality of slide-in slots for the insertion of mechanical drives (15).

35. An audio/video signal processing apparatus according to claim 34, wherein the plug-in and slide-in slots each conform to a standard form factor.
36. An audio/video signal processing apparatus according to claim 35, wherein the standard form factor for signal processing modules (12) is the PCI standard, the Mini PCI standard and/or the AGP standard.
37. An audio/video signal processing apparatus according to claim 35 or 36, wherein the standard form factor for mechanical drives is the 5 1/4 inch standard, the 3.5" standard, the 3" standard or the 2.5" standard.
38. An audio/video signal processing apparatus according to any of claims 1 to 37, wherein a signal processing module (12) emulates the audio and/or video signal application of a conventional audio or video apparatus.
39. An audio/video signal processing apparatus according to any of claims 1 to 38, wherein the signal processing modules (12) arranged in the housing (2) comprise a television module (131), a video module (132), a CD/DVD module (133), an audio module (134), a radio module (135), a photographic module (136) and/or a recording module (137).
40. An audio/video signal processing apparatus according to claim 39, wherein the television module (131) is an analogue television module and/or a digital television module.
41. An audio/video signal processing apparatus according to claim 40, wherein the television module (131) is an analogue television module for the reception of television signals according to the NTSC, PAL and/or SECAM standard.

42. An audio/video signal processing apparatus according to claim 40, wherein the television module (131) is a digital television module for the reception of television signals according to the DVB standard.
43. An audio/video signal processing apparatus according to any of claims 40 to 42, wherein the television module (131) is configured for the reception of television signals transmitted via satellite, cable and/or terrestrially.
44. An audio/video signal processing apparatus according to any of claims 40 to 43, wherein the television module (131) is configured for the processing of HDTV signals.
45. An audio/video signal processing apparatus according to any of claims 39 to 44, wherein the radio module (135) is an analogue and/or digital radio module.
46. An audio/video signal processing apparatus according to claim 45, wherein the radio module (135) is set up for the processing of radio signals transmitted according to the DAB standard.
47. An audio/video signal processing apparatus according to any of claims 39 to 46, wherein the recording module (137) allows a recording of data on an optical storage medium, in particular a CD, DVD or HD-DVD.
48. An audio/video signal processing apparatus according to claim 47, wherein the recording module (137) is able to display data recorded on the optical storage medium and is also able to record data on the optical storage medium.
49. An audio/video signal processing apparatus according to any of claims 39 to 48, wherein the recording module (137) is a magnetic storage drive, in particular a hard disk drive, a Minidisc drive or a flash memory drive.

50. An audio/video signal processing apparatus according to any of claims 39 to 49, wherein the video module (132) is set up for the decoding of coded audio and/or video data and/or for the coding of audio and/or video data.
51. An audio/video signal processing apparatus according to claim 50, wherein the video module (132) is set up for the processing of video signals according to the coding standard MPEG, DVC-Pro, H.26x., JPEG, Motion-JPEG, and/or JPEG-2000 and/or for the processing of audio signals according to the standard MP3, WMA, AC3 and/or AVI.
52. An audio/video signal processing apparatus according to any of claims 39 to 51, wherein the audio module (134) is set up for the decoding of coded audio data and/or for the coding of audio data.
53. An audio/video signal processing apparatus according to claim 52, wherein the audio module (134) is set up for the processing of audio signals according to one of the standards MP3, WMA, AC3, and/or AVI.
54. An audio/video signal processing apparatus according to any of claims 39 to 53, wherein the video module (132) and/or the audio module (134) is set up for the archiving of video and/or audio data.
55. An audio/video signal processing apparatus according to any of claims 39 to 54, wherein the photographic module (136) is able to code, edit and archive picture data.
56. An audio/video signal processing apparatus according to any of claims 1 to 55, wherein the I/O communication interface (114) comprises an output connection for consumer electronic apparatuses (330), in particular a SCART, composite and/or S-Video connection.